

5. (New) The method of claim 1 in which step (a) comprises the act of deriving a fixed point implementation.

6. (New) The method of claim 5 in which the act of deriving the fixed point implementation comprises the act of processing qualification.

7. (New) The method of claim 5 in which the act of deriving the fixed point implementation comprises the act of implementation sizing.

8. (New) The method of claim 1 in which step (a) comprises the act of implementing reference code.

9. (New) The method of claim 8 in which the act of implementing reference code comprises code profiling.

10. (New) The method of claim 1 in which step (b) comprises the act of optimization predicted to improve resulting assembly code.

11. (New) The method of claim 1 in which step (b) comprises the act of tuning low-level functions.

12. (New) The method of claim 1 in which step (c) comprises the act of manual assembly optimization.

13. (New) The method of claim 1 in which step (b) comprises either the act of feature tuning.

14. (New) A computer-readable medium comprising a sequence of instructions which, when executed by a processor, causes the processor to execute a method for optimizing a software program for a target processor to meet performance objectives, where the software program is coded in a high-level language, the method comprising the steps of:

(a) optimizing the software program such that a resulting first optimized form of the software program is substantially independent of the target processor and is substantially coded in the high-level language;

(b) optimizing the first optimized form of the software program such that a resulting second optimized form of the software program is substantially dependent on the target processor and is substantially coded in the high-level language; and

(c) optimizing the second optimized form of the software program such that a resulting third optimized form of the software program is substantially dependent on the target processor and is includes portions coded in a low-level language of the target processor.

15. (New) The computer-readable medium of claim 14, in which the method further comprises the steps of:

(a1) determining a first performance profile for the first optimized form of the software program, and comparing the first performance profile with the performance objectives; and

(b1) determining a second performance profile for the second optimized form of the software program, and comparing the second performance profile with the performance objectives.

16. (New) The computer-readable medium of claim 15, wherein steps (b), (b1), and (c) are not performed if the performance objectives are met after completing step (a), and step (c) is not performed if the performance objectives are met after completing step (b).

17. (New) The computer-readable medium of claim 14 in which step (a) comprises the act of deriving a floating point implementation.

18. (New) The computer-readable medium of claim 14 in which step (a) comprises the act of deriving a fixed point implementation.

19. (New) The computer-readable medium of claim 18 in which the act of deriving the fixed point implementation comprises the act of processing qualification.

20. (New) The computer-readable medium of claim 18 in which the act of deriving the fixed point implementation comprises the act of implementation sizing.

21. (New) The computer-readable medium of claim 14 in which step (a) comprises the act of implementing reference code.

22. (New) The computer-readable medium of claim 21 in which the act of implementing reference code comprises code profiling.

23. (New) The computer-readable medium of claim 14 in which step (b) comprises the act of optimization predicted to improve resulting assembly code.

24. (New) The computer-readable medium of claim 14 in which step (b) comprises the act of tuning low-level functions.

25. (New) The computer-readable medium of claim 14 in which step (c) comprises the act of manual assembly optimization.

26. (New) The computer-readable medium of claim 14 in which step (b) comprises either the act of feature tuning.